MPC&D 07-016

February 16, 2007

James D. Marshall
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

COMMENTS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT ON THE TENTATIVE WASTE DISCHARGE REQUIREMENTS FOR NPDES PERMIT NO. CA0004758 (RANCHO SECO)

Reference 1: Tentative Order issued by the Central Valley Regional Water Quality Control Board dated January 12, 2007.
Reference 2: Current Waste Discharge Order No. 5-01-182
Reference 3: Application for Renewal of Rancho Seco Waste Discharge Requirements, MPC&D 05-121, dated November 30, 2005.

Dear Mr. Marshall:

The Sacramento Municipal Utility District (hereafter the District) has reviewed the Tentative Order. The Tentative Order contains a number of discrepancies, inconsistencies, and errors. Therefore, the District requests the Board make the necessary corrections as detailed below prior to issuance of a Final Order.

The District provides the following comments on and requests for modifications to the Tentative Order. Incorporated into these comments also is the legal comment by our counsel, Downey Brand, LLP, which is Attachment 1, and technical Attachments 2 through 5.

COMMENTS ON THE WASTE DISCHARGE REQUIREMENTS

1. On page 4, **II. Findings. A. Background** the Tentative Order states that the District "…applied for a NPDES permit renewal to discharge up to 14 million gallons per day (mgd)…" On page 13, the Tentative Order applies a flow limit to the discharge for the first time, setting it at 14 mgd (**Effluent Limitation IV.A.1.c**). The District did not request any limitation on its discharge volume. The value of 14 mgd was documented in the Report of Waste Discharge as the average flow volume for the one-year period,

simply a figure requested in the renewal application form. It is not indicative of other time periods, nor is it equivalent to a design flow concept or necessary under NPDES regulations. We request that the flow limit VI.A.1.c be deleted and reference to SMUD's request for an authorized discharge of 14 mgd be deleted from the above finding.

The historical monthly average flows for 2004-2006 from the facility are described on Attachment 2. The measured flows consist of dilution water required under Rancho Seco's Nuclear Regulatory Commission license, as well as water from Rancho Seco Lake, irrigation water, and storm water. The District routinely discharges in excess of 14 mgd during winter/wet weather months and would be in violation of the WDR's as written, and as shown on Attachment 2 as to flows for 2004-2006. The proposed flow limitation would result in a situation where compliance with both the facility's existing Nuclear Regulatory Commission license and the proposed NPDES permit may be impossible.

In addition, the District must comply with requirements of the Davis-Grunsky Act for operation of recreational facilities at Rancho Seco Lake, and with requirements of the California Department of Water Resources, Division of Safety of Dams requiring rapid level reduction during an imminent dam failure event. Having an Effluent Limitation on the volume of the discharge could prevent the District from complying with these requirements.

The Rancho Seco facility is no longer a production facility. The District has no reason to increase its discharge volume to rid itself of pollutants or to increase production; nor does the District intend to increase its discharge volume on a regular basis.

Therefore, the District requests that newly added Effluent Limitation in IV.A.1.c and the finding statement described above be removed from this Tentative Order and any subsequent Orders. While the District strongly objects to a flow limit, if an Effluent Limitation is retained, the District requests revision of the limitation to apply a concept more parallel to the design flow approach used in other NPDES permits, which would be **24.6 mgd**. This is 10% over the 21.6 mgd (15000gpm) that represents a reasonable maximum flow to Clay Creek with the District's current systems. As is evident from Attachment 2, in both 2005 and 2006, the highest monthly average flows were over 20 mgd.

We have also discussed with Regional Board staff an alternative of using exclusively a *dry-weather* limitation based solely on monthly average flows for the three driest months of each calendar year. However, this still implies a justification for limiting flow, and is less consistent with the design flow concept. It thus represents a less desirable alternative.

2. On page 5, **II. Findings. B. Facility Description.1** the treatment processes for radioactive wastewater should be: reverse osmosis (RO), distillation, filtration, ion exchange, sedimentation, cyclone separation, *dilution, and/or blending*, as noted in the District's ROWD package and on page F-4. Please insert the additional phrase underlined in this sentence.

3. On page 12, **Effluent Limitation A.1.a, Table 6**, the District strongly objects to the inclusion of a **new Effluent Limitation for Electrical Conductivity** of 110 μmhos/cm, a level equal to the highest EC level measured in the discharge during the past three years. As stated in Attachment F, page F-28.n.*iii*, the discharge has no reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for salinity. Based on this finding, the previous salinity limitation for total dissolved solids was removed from the permit in the Tentative Order. It is inconsistent to now insert a much more stringent salinity limit, many times lower than the prior limit and than any water quality standard. The 110 μmhos/cm value is almost ten times lower than other similar permitted facilities. It is not calculated according to recognized methods for performance-based limits. <u>This new "performance-based" limitation for Electrical Conductivity should simply be removed</u>.

   The Tentative Order claims to support this unreasonably stringent Electrical Conductivity Effluent Limitation as necessary due to the Region-wide "effort to reduce salinity" in the Delta waters. Oddly, without supporting explanation, the limitation is identified as a "technology-based" limit. The limitation is inappropriate both as a factual matter and as a matter of law.

   Factually, the discharge from Rancho Seco to Clay Creek, Hadselville Creek, Laguna Creek, and finally the Cosumnes River does not reach the Delta for several months of the year since the river dries up prior to confluence with any Delta water. It therefore has little, if any, impact on salinity in the Delta.

   Even if it were to reach the Delta, it cannot be said to increase salt loads in the Delta because the salinity of the discharge consists of Folsom South Canal water that is already in the Delta watershed. In addition, since the electrical conductivity of the effluent is based primarily on the conductivity of the Folsom South Canal, over which the District has no control, it serves no purpose to have an effluent limitation as low as is proposed in the Tentative Order. An effluent limitation of 110 μmhos/cm will only lead to unnecessary violations if an excursion in the Canal does occur, with no benefit to water quality. This will result in a needless waste of time, resources and effort for both the District and the Regional Board staff.

   Furthermore, adding a "performance based" limit, here, based simply on the highest reported value in the past three years, is entirely unjustified as a technology-based limit as it is identified in the Tentative Order, which states no technological evaluation or technical basis for such a limit, but refers to vague regional water quality "efforts."

   It is also entirely unjustified as a water quality based limitation, due to the absence of reasonable potential. Indeed, the Regional Board removed the prior Total Dissolved Solids limit due to the absence of reasonable potential for salinity. To the extent that the Tentative Order implies a water quality load reduction process, it is legally inappropriate to create a load limitation before a Total Maximum Daily Load has been completed for the receiving water, and before any analysis has identified a specific impact of this discharge on an impaired water body or established a basis for an appropriate waste load allocation.

   Even if an Electrical Conductivity limit based on performance were to be included, despite the District's strong objections explained above, the level is inappropriate. The

Tentative Order uses no probabilistic, statistical calculation to allow for variability in the discharge to properly calculate a reliable performance-based level, achievable by the facility.

Therefore, the District requests that the Electrical Conductivity Effluent Limitation be removed from this and any future Orders.

In addition, the Regional Board should consider the fact that electrical conductivity of the Folsom South Canal water will increase in the coming years as a result of the Freeport Regional Water Authority Project (FRWAP), which will move Sacramento River Water through the Folsom South Canal during dry years (approximately three out of every ten). The mean of conductivity measurements in Sacramento River samples collected at Freeport was 130 μmhos/cm, with extreme values much higher. See, Folsom South Canal Water Quality Study, February 11, 2003, Table 4 (MFG, Inc., 2003), attached as Attachment 3. When this water is transferred to the Folsom South Canal, the electrical conductivity of the Rancho Seco facility's intake water will almost certainly rise above the proposed "performance-based" effluent limit. The District would have to deionize the water in order to meet this arbitrary limit, all to no purpose since the modest salt content is already destined for the Delta.

4. On page 12, **Effluent Limitation A.1.a, Table 6** the District requests that the **Effluent Limitations for Aluminum** be removed. The perceived need for this limitation was based on a single sample obtained on June 5, 2002, which was erroneously reported at 282 μg/L. Sierra Foothill Laboratory, Inc. has reissued its laboratory report for this sample, and the actual aluminum value is 82 μg/L. See, Sierra Foothill Laboratory report dated August 1, 2002 and revised on February 8, 2007, attached as Attachment 4. Since this value is less than the 4-day average (chronic) criterion for aluminum of 87 μg/L, there is no Reasonable Potential to exceed water quality criteria. Therefore, an Effluent Limitation for Aluminum is not justified or necessary.

   While we believe this change is uncontroversial based on the laboratory's correction and our discussions with Regional Board staff, we also note that if the Regional Board disagrees and finds reasonable potential and proposes to include aluminum limitations, the District also objects to the limitations on the basis that it is improper to base a limit on constituents that are merely passed through the facility from the Folsom South Canal and not added by the facility's operations, as further explained in the comments below pertaining to Copper. In addition, any direct application of the 304(a) aluminum criterion to the discharge has not been appropriately supported by a technically sound translation of the narrative toxicity objective and consideration of site specific application of all the factors recognized in the criteria themselves.

5. On page 12, **Effluent Limitation A.1.a, Table 6,** the District objects to the inclusion of an **Effluent Limitation for Copper** and requests that the final limitations and the associated interim limitation be removed. As explained below, the limitation is not justified because the District is not adding Copper to the discharge and waters of the United States, and because data is currently insufficient to find reasonable potential and to calculate the limits. Further, to the extent the Regional Board decides to include limitations for copper, the interim limit should be recalculated as described below to higher values.

Fundamental Rationale to Remove Copper Limitations

The Tentative Order bases copper limitations on a Maximum Effluent Concentration observed in a sample obtained on August 4, 2004, which was measured at 4.8 µg/L. There was no domestic waste discharge occurring in July or August of 2004. Also, there were no radioactive liquid releases or storm water runoff occurring at the sample collection time. The source of the detectable copper therefore appears to be the Folsom South Canal, which is the source of the facility's dilution water. This is recognized in the Tentative Order on page F-24, which states that the source of copper in the discharge appears to be the intake water from the Folsom South Canal.

It is improper to base a limitation on such constituents passed through the facility without any showing that they represent pollutants added to waters of the United States by the District. The District should not be responsible for treating water that is already part of the waters of the United States, and part of the Bureau of Reclamation's Central Valley Project. Comments on this subject provided by the District's counsel, Downey Brand LLP, are attached as Attachment 1.

Also, since 8 of 10 samples collected during the monitoring period of January 2003 through June 2005 were below detection or quantification levels, the District considers the sample result used as the MEC to be insufficient for consideration of a new effluent limitation.

If an Effluent Limitation for Copper is retained, the District requests a compliance schedule be included so that the District may evaluate the source(s) of copper and effective treatment options. The District's justification for a compliance schedule was submitted on February 16, 2007, and is attached as Attachment 5.

Revision of Interim Copper Limitations

Furthermore, if an Effluent Limitation for Copper is retained, the District believes that the interim limit should be 20.4 µg/L, not 5.8 µg/L. As explained in the District's justification, 20.4 µg/L represents the mean plus 3.3 standard deviations based on a lognormal distribution.

Any limitations should also accommodate and consider the changes to the Folsom South Canal planned as part of the FRWAP. As noted above, the source of copper in the discharge appears to be the intake water from the Folsom South Canal. As previously noted, the source water is expected to change during the life of this permit as a result of the (FRWAP), which will move Sacramento River Water through the Folsom South Canal during dry years. When that happens, both the hardness and the copper concentration of the source water would increase.

The February 2003, MFG, Inc. Folsom South Canal Water Quality Study, submitted with the District's comments on the Environmental Impact Report (EIR) for the FRWAP, states that average total hardness in the Folsom South Canal is 26 mg/L, whereas the Sacramento River hardness is 54 mg/L, levels also acknowledged in the EIR. (See Attachment 3, MFG, Inc. 2003, Tables 3 and 4.) MFG's Study also states that average copper levels in the Folsom South Canal are 0.6 µg/L (dissolved) and 0.85 µg/L (total), compared to average levels of 1.4 µg/L (dissolved) and 4.2 µg/L (total) in the Sacramento River. SMUD is already on record expressing concern that movement of Sacramento River Water through the Folsom South Canal by the FRWAP will put SMUD in jeopardy of non-compliance by changing the water quality of its intake water.

An intake credit is most appropriate in this situation, as it could be recalculated for dry weather conditions without modifying the permit. If Regional Board staff does not agree to remove the copper limitations entirely, the copper effluent limit should be explicitly expressed as a two-tiered value, varying with source water hardness. During dry years, when the source water hardness is 54 mg/L as $CaCO_3$ due to movement of Sacramento River water through the Folsom South Canal, the appropriate dissolved water quality objectives would be 7.52µg/L (Acute) and 5.29 µg/L (Chronic) for dissolved copper. This supports SMUD's assertion that the permit needs to account for changes in source water quality that would change the appropriate water quality objective.

6. On page 13, **IV. Effluent Limitations and Discharge Specifications. A. Effluent Limitations for Combined Discharge. 1.b.*ii*** includes superscript number 2, which is not explained. The District requests that this superscript should be removed.

7. On page 13, **IV. Effluent Limitations and Discharge Specifications. A. Effluent Limitations for Combined Discharge. 1.c** the District requests that the Monthly Average Discharge Flow be removed or modified as described in paragraph 1 above.

8. On page 13, **Table 7** the mass-based Effluent Limitations for TSS and BOD in the Domestic Effluent should be removed (and this should be reflected in Table F-8 and pages F-16 and F-17 of the Fact Sheet). Federal law requires only monthly and weekly averages and concentration-based limits for BOD and TSS. The Regional Water Board is proposing to add more stringent limits based on maximum daily values and mass limits that are more stringent than required by federal law, as shown by the recitation on Fact Sheet page F-16 of the technology-based limit requirements of federal regulation. As such, the Regional Water Board must perform a CWC section 13263

analyses prior to imposing these limits. Any previous inclusion was simply an error, which can be revised without anti-backsliding constraints.

Other Regional Boards have removed previously included daily values and mass limits for conventional pollutants. In a recently issued San Diego Region permit, the following justification was given: "Order No. R9-2006-002 does not retain the maximum at anytime concentration […] for CBOD5 and total suspended solids contained in Order No. 2000-012 and previous permits for the Discharger that were established using best professional judgment. Recent attempts to derive maximum at anytime limitations based on the secondary treatment standards at 40 CFR 133 using appropriate statistical approaches did not yield similar results as the previous maximum at anytime limitations; therefore, based on this new information, retaining the previous maximum at anytime limitations in Order No. R9-2006-002 is not supported." A similar justification exists to remove the daily limits from the City's tentative permit.

Similarly, other Regional Boards do not routinely include mass limits for conventional pollutants. See e.g., Order R2-2005-0008 at pg. 26; see also Order No. R9-2006-002 at pg. F-25 (the new permit "does not retain the […] mass emission rate limitations for CBOD5 and total suspended solids contained in Order No. 2000-012 and previous permits for the Discharger which were established using best professional judgment." Order No. R9-2006-002 at pg. F-17. "In the case of secondary treatment standards which are expressed as BOD (or CBOD) and TSS concentrations and technology-based concentration effluent standards for Oil and Grease, the need for mass emission rate (MER) limitations that are directly related to protection of … waters or proper operation has not been determined. Consequently, MER effluent limitations for CBOD, TSS and Oil and Grease have not been included in this Order; however, if information demonstrating a need for these limitations become available in the future, they may be reinstated in this Order."

9. On page 13, **IV.A.2.c.i Total Coliform Organisms**, the District requests that the limitation be changed to 23 MPN/100ml as a 30-day median. This is consistent with the Current Order No. 5-01-182. Expressing the effluent limitation as a 7-day median is only a recommendation by the Department of Health Services and is not required. Under the circumstances present for this discharge, the Regional Board should consider the specific facts and not apply the more stringent period where (a) the discharge itself is very small and the source close to being shut down, (b) the discharge is infrequent and (c) the discharge in this respect is not directly impacting immediate downstream or significant beneficial uses of the water.

10. On page 13, **2. Final Effluent Limitations for Domestic Effluent. d. Daily Discharge Flow,** The District requests that the limitation be amended to be "*The dry weather daily average domestic discharge flow shall not exceed the facility design flow of 60,000 gallons per day*." This is consistent with the Current Order No. 5-01-182.

11. On page 15, **V. Receiving Water Limitations. A. Surface Water Limitations.1 Bacteria**, the District requests that the phrase "… based on a minimum of not less than five samples for any 30-day period…" be removed so that this limitation is consistent with the MRP Table E-7 requirement for monthly sampling.

12. The District thanks the Regional Board staff for inclusion on page 21 of completion of a Water Effect Ratio study as a re-opener provision. The District agrees that if limitations for copper are retained, it is important to characterize the appropriate site-specific water quality objective for copper accurately to protect the beneficial uses of the receiving water. It is possible that a site-specific objective might resolve concerns over changes in the intake water quality that would result from the FRWAP noted above. However, this is not certain, and the cost of the determination would be better avoided by removal of the limitations.

13. On pages 21-23, the District also requests that the **special study provision VI.C.2.a relating to chronic toxicity** be deleted or modified. Specifically, the District may not be able to comply with the accelerated monitoring requirements, if needed, since the stream may be dry during all or part of the required monitoring time, and the District is unclear when a TRE would be initiated if the accelerated monitoring cannot be performed. Additionally, the District has already performed monitoring in 2003 and 2004 that was submitted to the Regional Board that indicates that the low chronic toxicity values are due to an "osmotic effect" not to the presence of a toxic substance. The "osmotic effect" results from the very low levels of minerals in the Folsom South Canal (and therefore the effluent discharge). The District believes that the TRE process would reach the same conclusion, but would incur a large amount of District resources, and is unnecessary. The District is willing to discuss this issue with Regional Board staff at a meeting prior to issuance of a final Order.

    If the special study provision is retained, the District requests that it be modified in several ways. First, since the method for acute whole effluent toxicity (EPA-821-R-02-012, Fifth Edition) allows for 90 percent survival in test controls when using the species designated (Pimephales promelas), the chronic toxicity test should provide for a numeric monitoring trigger of 1/0.90 TUc, or 1.11 TUc. This numeric monitoring trigger of > 1.11 TUc should be allowed as long as three consecutive chronic toxicity tests had results not >1.11 TUc. This would allow for random variation in sampling and testing.

    Furthermore, the language of provision VI.C.2.a. is unclear. The intent, as understood by the District, is that accelerated monitoring would be undertaken if the trigger were exceeded, and that a TRE would not be initiated if three consecutive chronic toxicity tests had results not greater than the trigger. However, paragraph iii contains the phrase "and initiate a TRE," and paragraph iv contains the phrase "and TRE initiation." These phrases imply that the TRE would be initiated as soon as accelerated monitoring was triggered, regardless of the results of that accelerated monitoring. This implication is contrary to the District's interpretation of the intent.

14. On page 26, **VI.C.7.a.i Compliance Schedule for Final Effluent Limitation for Copper**, the District requests that the second sentence requiring a compliance schedule justification be deleted. A justification is being submitted with these comments.

15. On page 26, **VI.C.7.a.i Compliance Schedule for Final Effluent Limitation for Copper**, the District requests that the final sentence be changed to state, "…the Discharger shall submit progress reports in accordance with…" to be consistent with the requirements in **Table E-11** on page E-14.

16. On pages 27 to 28, the District requests that section **VI.C.7.b** be removed, since there is no Reasonable Potential for Aluminum.

17. On page 28, **VII.B Total Coliform Organisms Effluent Limitation** the 7-day median should be changed to a 30-day median as described in paragraph 9 above.

COMMENTS ON THE MONITORING AND REPORTING PROGRAM

18. On page E-2, **Table E-2,** the District requests that the units for Flow be changed to gpd.

19. On page E-3, **Table E-3,** the District requests that the footnote for Gross Beta Particle Activity be changed from 12 to 11. There is no footnote 12.

20. On page E-3, **Table E-3,** the District requests that the footnote for Aluminum be changed from 9 to 8.

21. On page E-3, **Table E-3,** the District requests that the monitoring requirement for Boron be removed. As discussed on page F-23 of this order, there is no reasonable potential to cause or contribute to an in-stream excursion above the applicable water quality criteria for boron. The District has ceased using boron in any process and has completed processing all water with residual boron. The District believes that continued monitoring for boron is unnecessary and the monitoring requirement should be removed.

22. On page E-4, the District requests that **footnote 5 for Table E-3** be removed. The District is already complying with this monitoring requirement and believes that this footnote is unnecessary.

23. On page E-4, the District requests that **footnote 10 for Table E-3** be removed.

24. On page E-8, **Table E-6** the District requests that the monitoring location for Influent Flow be LND-001 and the monitoring location for Dissolved Oxygen, pH, Odors, and Freeboard be changed to monitoring location POND-001. LND-001 and POND-001 are described in Table E-1 on page E-2.

25. On page E-8, the monitoring locations RWS-001 and RWS-002 in **VIII.A. Monitoring Locations** and **VIII.A.1** should be changed to RSW-001 and RSW-002 to be consistent with the monitoring location name in Table E-1 on page E-2.

26. On page E-6 and E-7, the District requests that the requirement is section **V.B.7 and Table E-5** be modified to require only 100% effluent, not a series of dilutions. The receiving water for Rancho Seco is an ephemeral stream and is dry for much of the year. Using a dilution series with laboratory water as the diluents is of little relevance since the aquatic environment consists entirely of the effluent water for much of the year. Since most of the monitoring will use laboratory water, comparisons to tests using receiving water will be of little value.

COMMENTS ON THE FACT SHEET

27. On page F-8, in section **D.1. Domestic Effluent Limitations,** the cause of the March 15, 2005 total Coliform exceedance is incorrect. The correct cause was a failure of the flow transmitter that provides an input signal to the chlorine injection pump as explained in the District's letter to the Regional Board (RPM 05-032) dated March 23, 2005. The District requests that this be corrected.

28. On page F-8, section **D.2 Combined Effluent Limitations,** the District objects to some of the data presented in **Table F-5.** Prior to December 31, 2003 the discharge could not cause the pH of the receiving water to exceed the ambient pH of the Folsom South Canal. On the following dates, the pH of the Folsom South Canal was greater than the combined effluent pH and therefore was not exceeding a permit limitation: July 16, 2003; August 14, 2001; and July 31, 2001. The District requests that these lines be removed from Table F-5.

29. On pages F-20 to F-21, the District requests that the discussion be changed to indicate there is no Reasonable Potential for Aluminum, so there are no Effluent Limits.

30. On page F-24, the District requests that the interim copper limit be increased to 20.4 µg/L, as presented in the submitted justification.

31. On page F-32, the footnotes for **Table F-13** do not match with Table F-13. Footnote 2 is listed twice. The last one should be footnote 3.

32. On pages F-32-34, revisions should be made to correspond to any changes being made to the whole effluent toxicity testing provisions for Chronic Toxicity, as discussed above.

33. On page F-36, **Table F-15,** the District requests that reference to a discharge **flow limit and footnote 5** be deleted, as the District requested removal of this limit. Any discussion of flow should be changed to reflect the final resolution of this issue.

34. On page F-36, **Table F-15**, the basis for the electrical **conductivity limitation** is listed as "AP", which is not included in footnote 1. As noted above, the electrical conductivity limitation should be eliminated and thus not included on Table F-15.

35. On page F-37, **Table F-16**, the units for Flow should be "gpd" not "ggd". The District has requested the removal of mass limits and this would also require amendment of Table F-16.

Thank you for your consideration of these comments. Members of your staff requiring additional information or clarification may contact Mr. Brad Gacke at **(916) 732-4812**.

Sincerely,

Steve Redeker, Manager
Plant Closure and Decommissioning

Attachments:

Attachment 1: Downey Brand, LLP Comments dated February 16, 2007
Attachment 2: Discharge Flow Information
Attachment 3: Folsom South Canal Water Quality Study, February 11, 2003 (MFG, Inc.)
Attachment 4: Sierra Foothills Laboratory, Report No. 088846, dated August 1, 2002.
Attachment 5: Justification for Compliance Schedule for Copper dated February 16, 2007